

Exhibit B

Subject to Protective Order

EXPERT WITNESS REPORT

La Union del Pueblo Entero v. Abbott, No. 5:21-cv-844 (W.D. Tex.) (lead case)

Submitted by

Mark Hoekstra, PhD

Date of Report

March 3, 2023

I. Introduction

1. I have been engaged to respond to the second supplemental report dated February 10, 2023, that was written by Professor Eric McDaniel in the consolidated case *La Union del Pueblo Entero v. Abbott*, No. 5:21-cv-844 (W.D. Tex.). My analysis is based on my knowledge and experience as an active research economist who is well versed in the frontier empirical methods used in causal analyses.

II. Qualifications and Compensation

2. I am the Rex B. Grey Professor of Economics at Texas A&M University in College Station, Texas, where I have been on the faculty since 2011. Prior to arriving at Texas A&M, I was an assistant professor of economics at the University of Pittsburgh. I received my PhD in Economics from the University of Florida in 2006. I have published more than 20 papers in peer-reviewed journals in economics, including the American Economic Association's (AEA) top journal of *American Economic Review* as well as the top AEA journals relevant to my field (*American Economic Journal: Applied Economics* and *American Economic Journal: Economic Policy*) and top field journals (*Journal of Labor Economics*; *Journal of Public Economics*; *Journal of Human Resources*). These studies have used a wide variety of administrative datasets, including data on voting. I serve as a reviewer for approximately 20 paper submissions per year, including for top economics journals. I serve as an Associate Editor at the *Journal of Labor Economics* (since 2018) and at the *Journal of Human Resources* (since 2015), which are the top two field journals in labor economics.

3. The common theme throughout both my research and my teaching is careful attention to the assumptions underlying various research designs used to assess the causal impact of policies. Some of my research is used as examples in the textbook *Causal Inference: The Mixtape* by Scott Cunningham, which is a leading graduate-level book on empirical methods used in economics. I teach a PhD-level field course in labor economics, the focus of which is on understanding and assessing the

various research methodologies used by economists and other social scientists. These include the methods used to test for racial and gender bias in different settings I also teach part of the core 1st-year PhD sequence in econometrics, in which I focus on how to assess causality in non-experimental contexts. I am perhaps best known among the PhD students as someone who offers advice on research projects, including whether the proposed method is sufficient to answer the question at hand. I recently won department-level awards for both the quality of graduate teaching and the quality of feedback given to students. During my time at Texas A&M, I have chaired more than 10 dissertation committees, and many of my students have gone on to careers at R-1 research universities. I have served on the committees of countless more PhD students.

4. I also hold an appointment as a Research Fellow at the National Bureau of Economic Research based in Cambridge, Massachusetts, and as a Research Fellow at the Institute for Labor Economics (IZA) based in Bonn, Germany. In 2012, I received the IZA Young Labor Economist Award.

5. I am being compensated for my time at the rate of \$600/hour. I have not previously testified as an expert witness.

III. Assessment of Professor McDaniel's Second Supplemental Report – Overview

6. Did the provisions of SB1 on early in-person voting hours and mail-in voting reduce turnout in Texas? And did SB1 generate an outsized impact on voting among the Black population in Texas? In his February 10, 2023 Supplemental Report, Professor McDaniel concludes that “the analysis I have conducted indicates to be [sic] that new voting laws have a detrimental impact on voting with indications of racial bias.”

7. Neither of these two things is true. Professor McDaniel’s analysis does not show that SB1 had a negative impact on voting in Texas in the 2022 general election. Moreover, the lower

turnout in voting in the 2022 Texas general election did not indicate any evidence of a differential racial impact from the SB1 changes.

- A. The baseline year of 2020 that Professor McDaniel used in his analysis was highly anomalous, and not comparable to 2022, for a host of reasons unrelated to SB1. Most obviously, presidential election years always draw substantially higher turnout than non-presidential election years like 2022.

Moreover, 2020 also had numerous one-time factors that boosted turnout. It featured a close and highly polarized presidential contest involving an unusual and controversial candidate, President Trump, which likely also increased turnout. The election was also conducted during the worst pandemic in at least 100 years. The resulting shutdowns meant that people had more time away from their normal places of business, and thus had more time to focus on the election. Moreover, the nation was rocked throughout the months prior to the 2020 general election by the murder of George Floyd, who grew up in Houston, and the protests and civil disturbances that followed it. Finally, the 2020 general election was the first time in American history when voters had an opportunity to elect a Black woman as Vice President, which may also have increased voter turnout. The collective impact of these emotional events was likely to boost voter turnout in Texas in 2020, especially among Black voters.

- B. In contrast, the Texas general election in 2022 included none of these turnout-boosting factors. In addition, unlike in 2020 and 2018, there was no U.S. Senate election in Texas in 2022. Accordingly, one would reasonably expect in 2022 (as compared to 2020) dramatically lower Texas voter turnout in general, and lower Black voter turnout in particular, regardless of whether SB1 had any effects on voter turnout at all. Thus, merely noting lower voter turnout in 2022 as compared to 2020 proves nothing about the effects of SB1. To do that, it would be necessary to prove the portion (if any) of that lower 2022 turnout that specifically resulted from the SB1 changes. Professor McDaniel failed to do this.
- C. The evidence instead strongly indicates that the SB1 changes in Texas had little or no effect on Texas voter turnout in the 2022 general election. Rather, the decline in turnout that Professor McDaniel documents from 2020 to 2022 occurred nationwide, not (only) in Texas, where SB1 took effect. As a result, it would be a mistake to attribute that decline in turnout to SB1, as the decline from 2020 to 2022 was clearly a nationwide trend that Texas tracked quite closely. Moreover, all of his analyses are unreliable because they use 2020 as a baseline for comparison, though it was an outlier both in general and electorally. Additionally, I demonstrate that if Professor McDaniel had used 2014 as a baseline—which is one of the two most recent midterm election years he could have used as a basis of comparison for the 2022 midterm election, but chose not to—turnout in Texas in 2022 actually increased, and did so by more than the rest of the country, despite SB1.
- D. In addition, I show that the evidence of larger declines in turnout, and in the share of voters choosing to vote early in-person, among counties with larger shares of Black voters is stronger for counties *whose early voting hours were completely unaffected by SB1*. I also show there is no such relationship for the one type of early voting—mail-in voting—that impacted all Texas counties equally. In short, the entire relationship between the racial composition of a county and the decline in voting turnout, and in the decline in choosing early-voting as a method of voting, is

driven by counties whose early voting hours were already in compliance with SB1, even before it was passed. In fact, I show that early in-person voting continued to become more popular with Texas voters in the 2022 election, and if anything was above the historical trend.

E. Finally, I note that Professor McDaniel's conclusion does not seem to follow from his own interpretation of his findings. In particular, the text of his main report acknowledges the limitations of using county-level data to infer behavior about individuals of certain races in those counties, which is a valid concern. In addition, he states that "The extent to which this [the larger reductions in turnout among more-Black counties] was driven by SB-1 cannot be discerned from these data," and that it was "not clear the extent to which these changes brought by SB-1" contributed to the steeper drop in early in-person voting in counties with larger Black population shares. Based on my analysis of his findings and my own findings using the same underlying data, I share Professor McDaniel's skepticism of his findings, even if he seemed to ignore that skepticism in his conclusion.

8. In fact, I believe it is clear there is no evidence in Professor McDaniel's report that SB1 caused a reduction in voter turnout, since the rest of the country experienced similar reductions in turnout over similar time periods. Similarly, there is no evidence that SB1 caused a steeper reduction in either turnout or early in-person voting among counties with large Black population shares, since that result is statistically stronger, and driven by, counties whose early voting hours were unaffected by SB1.

IV. 2020 was an unusual year both in general, and with respect to election turnout and voting methods.

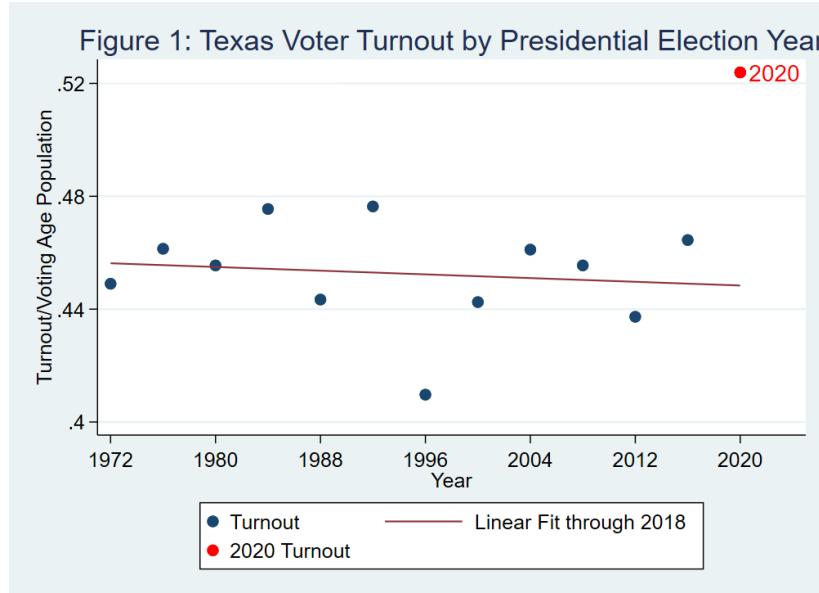
9. A point of emphasis in my first report was that 2020 is an outlier year. Given that Professor McDaniel continues to use 2020 as a baseline year for comparison, however, it is worth emphasizing, again, just how unusual 2020 was. First and foremost, it was characterized by the worst pandemic in at least 100 years, which led to sickness, death, and economic shutdowns, and more generally transformed the way most people lived their lives. Moreover, according to Center for Disease Control and Prevention, there is evidence that Black populations suffered from much higher

hospitalization and death rates from Covid-19.¹ The 2020 election was not immune from those factors, which likely contributed to both the high overall turnout rate, as well as high rates of early voting, both in person and by mail.

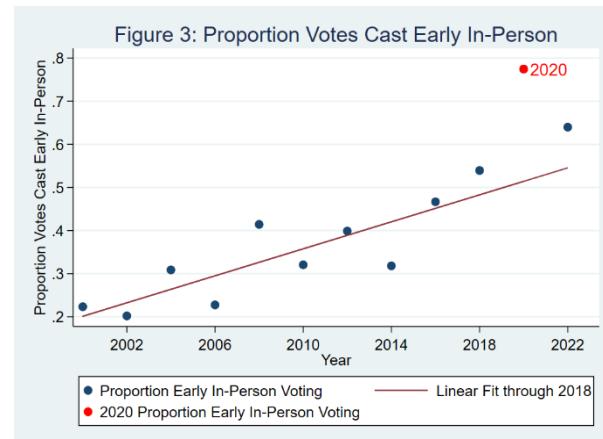
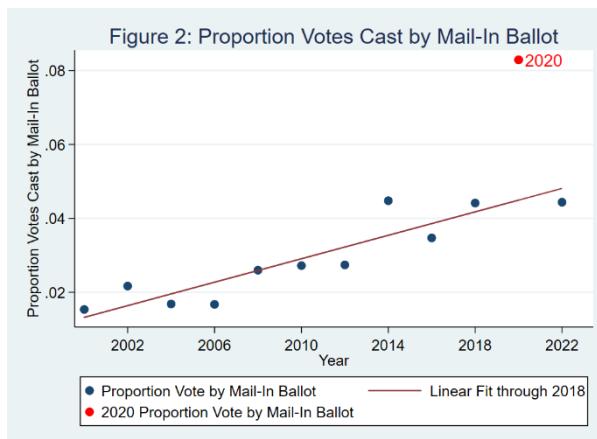
10. As though the pandemic wasn't enough to make 2020 an outlier, there were also other factors that were likely especially relevant for the election, both in general and with respect to turnout for Black citizens. In particular, there was the murder of George Floyd (who grew up in Houston) and the subsequent intense societal focus on racial justice, the first Black female as a candidate for vice president, and for that matter, the candidacy of Donald Trump. It is not difficult to imagine how any one of these factors could have differentially impacted the voting of Black citizens in 2020, compared to citizens of other races, which makes any comparison to 2022 even more problematic.

11. The net effect of these factors is that 2020 was a really unusual election year, both with respect to overall turnout, and with respect to early voting, both of which are the focus of Professor McDaniel's analysis in this report. This is evident in Figure 1, which shows Texas turnout, relative to voting age population, for all presidential elections from 1972 to 2020. It clearly shows that 2020 was an outlier even among presidential elections, which have higher turnout than midterm elections. This raises serious questions about how proper it is to use 2020, and only 2020, as Professor McDaniel does, in order to assess the impact of the SB1 on voting in the 2022 midterm election.

¹ The risk of Covid-19 infection, hospitalization, and death by race and ethnicity can be accessed at <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html>.



12. The status of 2020 as an outlier is also clear with respect to early voting, which is the other voting outcome examined by Professor McDaniel. Here too, it is clear that 2020 was an outlier. Figures 2 and 3 show historical trends in Texas for the proportion of votes cast by mail-in ballot and the proportion of votes cast early, in-person. In both cases, 2020 was a clear outlier that deviated significantly from previous trends. In both cases, it is equally clear that 2022 represented a return to the historical trend.



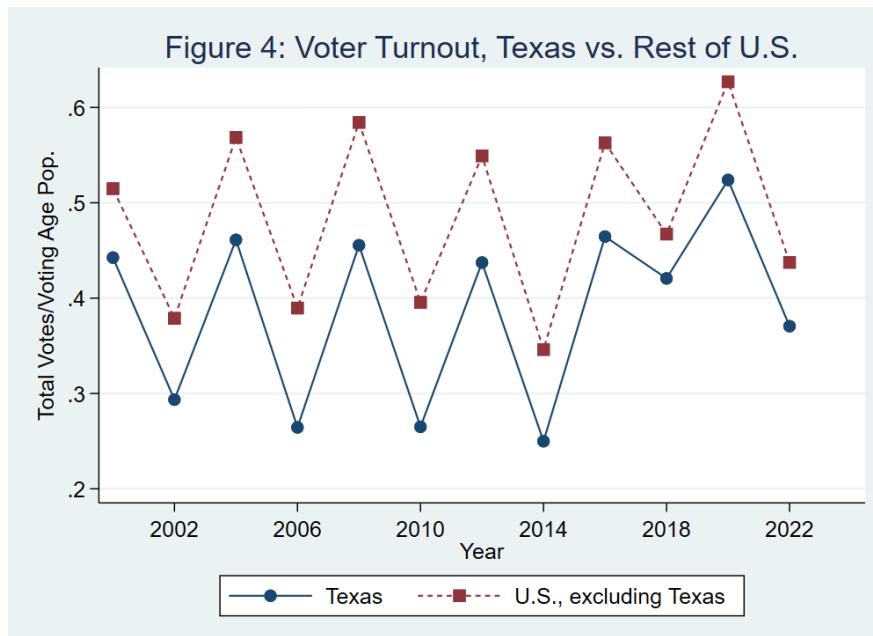
13. This raises an important question: To what extent would changes in voting behavior, from the outlier presidential election of 2020, to the midterm post-pandemic election of 2022, capture the impact of SB1? Unfortunately, Professor McDaniel does not grapple with this question, which undermines his findings. Below, I show that much, if not all, of what occurred in 2022 was a return to trend, both inside and outside of Texas, even if it represented a change from the outlier behavior of 2020.

V. Turnout declined nationally, and in Texas, from 2020 to 2022.

14. One way that social scientists assess the validity of a research finding that one policy impacted an outcome is to ask whether we observe the same purported effect in populations that should not have been affected. If we observe similar effects across both populations, it suggests that some other factor is likely responsible for the changes we observe. More concretely, Professor McDaniel shows changes in voting outcomes in Texas in 2022 compared to 2020. It is therefore constructive to ask whether we observe similar changes in voting outcomes outside of Texas, or even in Texas counties that should not have been impacted by SB1. If we do, then we conclude that the changes he highlights are likely not caused by SB1, but rather by some other factor that seemingly impacted everyone.

15. With that in mind, Professor McDaniel shows in the first part of his report (e.g., Figure One) that early voting turnout—that is, mail-in voting plus early in-person voting, divided by voter age population—declined in Texas in 2022, compared to 2020. Given that over 85 percent of votes cast in 2020 were early in-person or mail-in votes, as shown in Figures 1 and 2 above, it is clear that what Professor McDaniel is capturing is that turnout fell in 2022 relative to 2020. Professor McDaniel interprets this fact as evidence that SB1 likely caused the reduction in turnout.

16. However, what Professor McDaniel doesn't tell you is that turnout fell everywhere—including outside of Texas—from 2020 to 2022. This is unsurprising, given that 2020 was both a presidential election, and, as Figure 1 showed, had such high turnout that it was an outlier even among other presidential elections. This was true across the country, and it turns out that with few exceptions, trends in turnout over time in Texas closely track trends in turnout in the rest of the country. This is shown in Figure 4, which shows turnout relative to voting age population in Texas, and in the rest of the U.S., excluding Texas.² It shows that while turnout is consistently higher during presidential election years than during midterms, trends in Texas closely matched trends in the rest of the U.S. This is also true from 2020 to 2022, where turnout declined in Texas, as pointed out by Professor McDaniel, though it also declined by a similar magnitude everywhere else.



² Texas data came from the Texas Secretary of State, accessed at <https://www.sos.state.tx.us/elections/historical/70-92.shtml>. Turnout for the rest of the U.S. is computed using those data on Texas, as well as data on the entire United States published by the United States Elections Project, accessed at <https://www.electproject.org/>.

17. This is also shown in Table 1, which shows the change in total turnout in 2022 compared to the baseline years of 2014, 2016, 2018, and 2020. Consistent with Figure One from McDaniel's report, Column (4) shows that from 2020 to 2022, turnout in Texas declined by 29.3 percent.³ Importantly, however, Column (4) also shows a slightly larger decline in turnout throughout the rest of the country of 30.2 percent.

Table 1: Change in turnout in 2022 versus previous years, Texas vs. rest of U.S.

	Percent change in turnout in 2022, compared to:			
	2014 (1)	2016 (2)	2018 (3)	2020 (4)
Texas	48.3%	-20.2%	-11.9%	-29.3%
Rest of U.S.	26.4%	-22.3%	-6.4%	-30.2%

Notes: Turnout is defined as total votes divided by voting age population. Percent change is computed as the difference in turnout from 2022 compared to the baseline year, divided by the rate for the baseline year. Texas data come from <https://www.sos.texas.gov/elections/historical/70-92.shtml>, while turnout for the rest of the U.S. was computed using Texas data and data from The United States Elections Project (<https://www.electproject.org/>).

18. Put differently, whatever was causing the decline in turnout from 2020 to 2022 in Texas, seemed to also cause the decline in turnout throughout the rest of the country. While the purpose of my report is not to attempt to assess the reasons for that—though the end of the pandemic and the fact that 2022 was a midterm election, not a presidential one like 2020 are likely the two biggest factors—what is clear is that the decline in turnout over this time period was not due to SB1, which was only passed in Texas.

19. The other columns show results using other years as the baseline. As in Figure One of Professor McDaniel's report, Columns (2) and (3) show that voter turnout in Texas in 2022 also fell relative to 2016 and 2018, though less than compared to 2020. Importantly, however, it is clear that relative to 2016 and 2018, voting rates in 2022 fell everywhere else in the country as well, by

³ Texas turnout in 2020 was 52.39%, compared to 37.06% in 2022. This is a decline of 15.34 percentage points or approximately $15.34/52.39 = 0.293$, or 29.3 percent.

somewhat more than Texas when using 2016 as a baseline, and somewhat less when using 2018 as a baseline. Finally, Column (1) shows results using 2014 as the baseline, which shows that the increase in voting in Texas in 2022 was significantly higher than in the rest of the U.S.

20. In short, Table 1 shows that voter turnout in Texas did decline in 2022 compared to 2020, 2018, and 2016. However, it is a mistake to attribute this decline to SB1, because the rest of the country experienced similar declines in turnout over those same time periods.

VI. Though turnout declined (in Texas and elsewhere) from 2020 to 2022, early voting rates increased in Texas, keeping pace with (or even exceeding) historical trends.

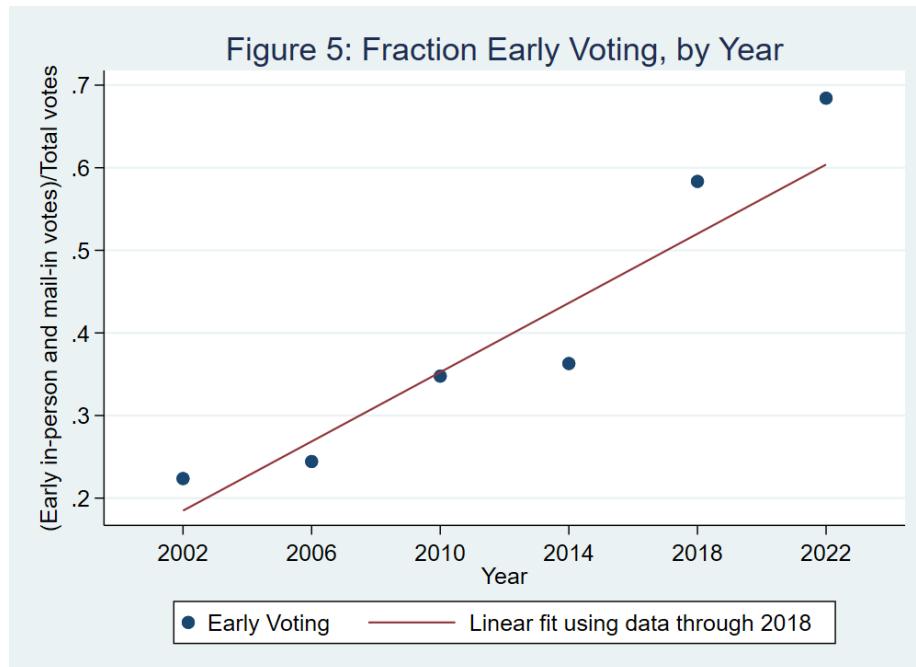
21. In reading Professor McDaniel's report, it would be easy to get the impression that early voting became less popular with Texas voters in 2022, compared to 2020, and even compared to 2016 and 2018. However, as noted in the previous section, that is because Professor McDaniel is examining not how popular early voting is among voters, but rather the share of all registered voters who choose to vote early. As demonstrated above, there was a general decline in voter turnout in 2022 relative to 2016, 2018, and 2020, both in Texas and elsewhere in the U.S.

22. This means that in assessing whether early voting became less popular in Texas due to SB1, it is important to account for the secular trend in turnout. The easiest and best way of doing this is to look at the share of all voters who choose to vote early, either in-person or via mail.

23. Results are shown in Figure 5, which shows that the fraction of voters who choose to vote early in non-presidential elections has been steadily increasing over time.⁴ More importantly, it shows that the fraction of early voting in 2022 essentially remained in line with historical trends. If anything, the rate of early voting in 2022, following SB1, was higher than the trend line based on non-

⁴ Appendix Figure A1 shows results for all elections, including presidential elections, and shows that early voting rates in 2022 also followed the historical trend using all elections. Appendix Figure A1 also clearly shows that 2020 was an outlier with respect to early voting.

presidential elections from 2002 through 2018. In short, there is no evidence that Texas voters shied away from early in-person voting in the aftermath of SB1's implementation.



VII. The statistically significant relative declines in turnout among counties with larger Black population shares were driven by changes in counties unaffected by SB1's rules regarding early voting hours

24. The analyses above make it clear that Texas did not observe a larger decline in turnout relative to the rest of the country. Similarly, they make clear the fact that early voting continued to become more and more popular in Texas, following or even exceeding its historical trend.

25. However, it would still be potentially worrisome if SB1 were shown to have a disparate impact on the turnout of minority voters. To assess this, Professor McDaniel asks whether counties with larger Black population shares experience larger declines in turnout, or in early voting as a share of total turnout.

26. There are two inherent limitations of this analysis:

- i. The first is that as demonstrated earlier in this report, using 2020 as the baseline year is problematic because 2020 was clearly an outlier with respect to both total turnout, and the share of voters who voted early. It is especially problematic for this analysis given the emphasis in 2020 on racial justice, which may have boosted turnout in counties with larger Black population shares. As a result, we might well worry that voting rates in counties with larger Black population shares may revert to the mean.
- ii. In addition, as Professor McDaniel acknowledges in lines 144-149 of his report, it is hard to make inferences about individual behavior using county-level data. Put differently, it is not possible to distinguish between whether voting declined among White voters in counties with larger Black population shares, or among Black voters in those counties.

27. With those limitations in mind, Professor McDaniel's analysis shown in the upper right-hand corner of Appendix Table A1 in his report indicates that counties with higher Black population shares did experience larger declines. Unfortunately, in his analysis Professor McDaniel made a mistake in computing the percent change in turnout from 2020 to 2022, the effect of which is to make the apparent link between county race and decline in turnout larger than it is.

- i. Whenever you compute the relative change from one year to another, you subtract the current value from next year's value, and then divide that difference by the current value (i.e., where you started). For example, if I weigh 200 lbs today and gain 20 lbs, the relative increase in weight is $(220 - 200)/200 = 0.1$, or 10 percent. Similarly, the relative change in voter turnout from 2020 to 2022 should be defined as voter turnout in 2022, minus voter turnout in 2020, all divided by voter turnout in 2020. Instead, Professor McDaniel defined voter turnout using voter turnout from 2022 in the denominator. I assume that this was an honest mistake, and I replicate the result he reported in the upper right-hand side of his Appendix Table A1 in Panel A of Table 2.⁵
- ii. Panel B demonstrates the impact of Professor McDaniel's mistake by showing results from the same model using the correctly defined relative change in turnout from 2020 to 2022. The result indicates a smaller correlation between the decline in turnout from 2020 to 2022 and the Black population share of the county, but one that remains statistically significant.

28. However, it is important to note that there are two types of voting in Texas that were potentially impacted by SB1: mail-in voting, and early in-person voting, the latter of which is considerably more common than the former. In Column (2) of Table 2, I estimate the exact same

⁵ Throughout his analysis, Professor McDaniel also seems to be missing Calhoun County, and thus reports results on 253 counties, rather than all 254. This difference, however, was inconsequential. As a result, in order to avoid the distraction of estimating effects with a slightly different sample, I estimate effects using the same exact data as Professor McDaniel, which he provided to me.

model as Professor McDaniel, except using the change in turnout in *mail voting* from 2020 to 2022. The correlation between county race and the change in mail-in voting turnout is one-tenth as large as it is in Column (1), and is not statistically significant at any conventional level. In short, Column (2) shows that the relative decline that Professor McDaniel reports must be due to early in-person voting, because there is no evidence of a differential decline in mail-in voting.

Table 2: Correlation between percent change in turnout from 2020 to 2022 and percent Black in the county

	% Change in turnout, 2020 to 2022 (1)	% Change in mail voting turnout, 2020 to 2022 (2)	% Change in turnout, 2020 to 2022 (3)	% Change in turnout, 2020 to 2022 (4)
<u>Panel A: Baseline year (mistakenly) = 2022</u>				
Percent Black	-0.005*** (0.001)	-	-	-
Observations	253	-	-	-
<u>Panel B: Baseline year = 2020</u>				
Percent Black	-0.003*** (0.001)	-0.0003 (0.0002)	-0.006 (0.004)	-0.003*** (0.001)
Observations	253	253	24	229
Sample	All	All	Counties w/ early voting hours impacted by SB1	Counties unaffected by SB1's restrictions to early voting hours
Controls for pop. density	Yes	Yes	Yes	Yes

Notes: Each column is a separate regression, and uses a model similar to that used by Professor McDaniel in the upper right-hand side of Appendix Table A1. Panel A is an exact replication of McDaniel, where percent change in turnout is defined as the fraction of registered voters in 2022 who voted, minus the fraction of registered voters in 2020 who voted, all divided by the fraction of registered voters in 2022 who voted. Panel B uses the correct baseline turnout from 2020 in the denominator when computing the percent change in turnout. Column 3 restricts the sample to those 24 counties identified by Professor Grose, another expert witness retained by plaintiff Mi Familia Vota, as the only Texas counties whose early voting hours were impacted by SB1. Column 4 shows results for the remaining Texas counties whose early voting hours in 2020 were already in compliance with SB1. *** denotes statistical significance at the one percent levels. The absence of asterisks indicates the estimate is not statistically significant at the 10, 5, or 1 percent level. The estimates in Columns 3 and 4 are not statistically different from each other at any conventional level.

29. It turns out, however, that not all counties were impacted by SB1's rules regarding early voting hours. In particular, in his first report, Professor Christian Grose, another expert retained by Mi Familia Vota along with Professor McDaniel, identified that only 24 of Texas's 254 counties as

having had early voting hours in 2020 that were impacted by SB1's rules. Yet, Professor McDaniel's analysis groups all Texas counties together.

30. What happens when we focus on only those Texas counties whose early voting hours were actually impacted by SB1? Results are shown in Column (3), which shows a negative correlation that, in contrast to the overall result shown in Column (1), is not statistically significant at any conventional level. Put differently, when we look at the only counties where critics might well expect to see an effect, we cannot rule out the possibility that the correlation between decline in turnout and county racial composition is due to chance.

31. More importantly, Column (4) of Table 2 shows results for the counties that were *unaffected* by SB1's rules regarding early voting hours. In short, per the other expert witness retained by the plaintiff, these counties had hours that were already within the SB1 guidelines in 2020, before SB1 was passed and implemented. Yet Column (4) shows that there was a statistically significant correlation between the decline in turnout and the racial composition of the county. In fact, this estimate is nearly identical to the estimate shown in Column (1), which corresponded to the result that Professor McDaniel showed and emphasized in his report. This indicates that the evidence that Professor McDaniel cites as suggesting that counties with larger Black population shares experienced larger declines in turnout from 2020 to 2022 is driven nearly entirely by counties *whose early voting hours were unaffected by SB1*. Put differently, Column (4) demonstrates that whatever Professor McDaniel's main results in Column (1) were capturing, it was not the effect of SB1.

32. Thus, Table 2 shows that while counties with larger Black population shares did experience larger declines in turnout from 2020 to 2022 than other counties, this result was driven entirely by changes in early in-person voting, rather than mail-in voting. More importantly, the strongest statistical evidence of this decline was among counties whose early voting hours were

unaffected by SB1. Collectively, this indicates that while the decline in turnout was real, it was not caused by SB1.

VIII. The difference in the relationship between early in-person voting rates and voting in 2020, compared to in 2022, was statistically insignificant, and was driven by counties unaffected by SB1's rules regarding early voting hours

33. The other assertion made by Professor McDaniel in his report with respect to SB1's differential impact on voting in counties with larger Black population shares is that while those voters were more likely to vote early, in-person in 2020, that was no longer true in 2022. He suggests that SB1 broke this link, and interprets it as evidence of disparate impact.

34. The problem is that even if we accept this as a proper test—despite serious concerns, for example, about using 2020 as a baseline—we need to assess whether the difference one sees is so large that we can rule out that it occurred due to chance. In other words, we need to assess whether the difference is statistically significant. Professor McDaniel did not provide the results of such a test in his report, and the result indicates the difference is not statistically significant.

35. In columns (1) and (2) of Table 3, I provide an exact replication of Professor McDaniel's findings, which he shows in the bottom half of Appendix Table A1 in his report. What Professor McDaniel did not report, however, is whether the correlation in 2022 was statistically different from that in 2020. Put differently, can we rule out the possibility that the correlations in the two years are different due to chance?

36. It turns out that the difference between these two estimates is not statistically significant, at any conventional level, as reported in Column (3) of Table 3. In short, while Professor McDaniel makes much of the fact that the correlation between Black population share and early in-person voting is statistically significant in 2020, but not in 2022, one cannot rule out the difference in that correlation across years is due to chance. This indicates there is no statistical evidence that the strength of the link asserted by Professor McDaniel changed at all between 2020 and 2022.

Table 3: Correlation between proportion of the electorate who voted early, in-person, and the percent Black population in the county

	Proportion of voters using early in-person voting in:	Is the difference between (1) and (2) stat. significant?	
	2020 (1)	2022 (2)	(3)
Percent Black	0.002** (0.001)	0.001 (0.001)	No
Observations	253	253	-
Sample of counties	All	All	-
Controls for pop. density	Yes	Yes	-
Controls for turnout	Yes	Yes	-
Shown by McDaniel	Yes	Yes	-

Notes: Columns 1 and 2 are replications of results shown by Professor McDaniel in the bottom of Appendix Table A1. The unit of observation is the county. ** denotes statistical significance at the five percent level. The absence of asterisks indicates the estimate is not statistically significant at the 10, 5, or 1 percent level. Column 3 shows the result of a test of whether the difference in the coefficients from Columns 1 and 2 is statistically significant at the 10, 5, or 1 percent level.

37. In addition, as noted in the previous section, not all Texas counties were impacted by SB1's rules regarding early voting hours. Columns (1) – (3) of Table 4 replicate the results in Table 3 for only those counties identified by the plaintiff's other expert, Professor Grose, as having had early voting hours in 2020 that were restricted by SB1. Results indicate that there was no statistically significant correlation between the racial composition of the county and the popularity of early in-person voting in 2020, or in 2022. In short, in the counties whose early voting was actually impacted by SB1, we find no evidence at all of the link that Professor McDaniel asserted, much less a change in the link.

38. Columns (4) – (6) show results for the majority of Texas counties whose early in-person voting could not have been impacted by SB1, for the simple reason that their early voting hours in 2020 were already in compliance with SB1. Results indicate that estimates are nearly identical to those for the full sample of counties emphasized by Professor McDaniel. In addition, the

correlation between early in-person voting was significant in 2020, but not in 2022, as with the result for the full sample emphasized by Professor McDaniel, and replicated in Table 3.

Table 4: Correlation between proportion of the electorate who voted early, in-person, and the percent Black population in the county, by whether or not counties' early-voting hours were impacted by SB1

	Proportion of voters using early in-person voting in:		Is the difference between (1) and (2) stat. sig.?	Proportion of voters using early in-person voting in:		Is the difference between (4) and (5) stat. sig.?
	2020 (1)	2022 (2)		2020 (4)	2022 (5)	
Percent Black	0.004 (0.006)	-0.009 (0.010)	No	0.002** (0.001)	0.001 (0.001)	No
Observations	24	24	-	229	229	-
Sample	Counties w/ early voting hours impacted by SB1			Counties unaffected by SB1's restrictions to early voting hours		
Controls for pop. density and turnout	Yes	Yes	-	Yes	Yes	-
	Yes	Yes	-	Yes	Yes	-

Notes: Columns 1, 2, 4, and 5 use the same model used by Professor McDaniel in the bottom of Appendix Table A1. Columns 1 and 2 show estimates for (only) the 24 Texas counties that had early voting hours impacted by SB1, according to Professor Grose, another expert witness retained by plaintiff Mi Familia Vota. Columns 4 and 5 show results for the other counties, which per Professor Grose did not have their early voting hours impacted by SB1. ** denotes statistical significance at the five percent level. The absence of asterisks indicates the estimate is not statistically significant at the 10, 5, or 1 percent level.

39. Thus, if one were to accept the test that Professor McDaniel proposes, as a test of the causal effect of SB1 on racial patterns in early in-person voting, one would conclude that SB1 had a disparate impact on early in-person voting *primarily in the counties whose early in-person voting hours were unaffected by SB1*. This indicates that the pattern Professor McDaniel has uncovered is due to other factors—such as the outlier nature of the 2020 election, and subsequent mean reversion—rather than SB1.

IX. Professor McDaniel's reports on racial patterns in ballot rejections during the 2022 primary election in Texas, and the large reduction in rejections in the November 2022 general election

40. Professor McDaniel referenced two reports that asserted racial disparities in mail ballot rejection rates during the 2022 primary election. The first was a New York Times article asserting that

there were racial disparities in mail ballot rejections in Harris County during the primary election of 2022. The second was a Brennan Center for Justice report asserting the same more broadly across Texas during the primary.⁶ These are the only two external reports that Professor McDaniel referenced in his report asserting that there were racial disparities in mail ballot rejections.

41. While it is difficult for me to assess the validity of the empirical work in these two reports, one thing that is clear is that both are limited given they only study the 2022 primary election. As Professor McDaniel acknowledges, ballot rejection rates were much higher during the primary than for the November 2022 general election. In particular, while the mail ballot rejection rate for the primary election was 12.4 percent, the rate of rejections fell to only 2.7 percent for the November 2022 general election. As a result, it is at best unclear whether any patterns that may have held during the primary continued to hold during the general election, when the rejection rate was only one-fifth as high, or will continue to hold going forward.

42. Moreover, several reports indicate that a major reason for the high rejection rate in the primary was because voters failed to write down *any* identification number on the flap.⁷ This is not altogether unexpected; anytime rules change, there is some learning curve associated with the new process. This learning curve was referenced by Ms. Trudy Hancock, the Brazos County Elections Administrator, who said that of the smaller number of ballots received for the November 2022

⁶ These reports can be accessed at <https://www.nytimes.com/2022/03/18/us/politics/texas-primary-ballot-rejections.html> and <https://www.brennancenter.org/our-work/research-reports/records-show-massive-disenfranchisement-and-racial-disparities-2022-texas>.

⁷ For example, on November 4, 2022, NPR reported that “In many cases, voters [in the primary] completely missed the field on the ballot return envelope that requires either a partial Social Security number or driver’s license number” (“Texas Officials Say They’re Rejecting Fewer Mail Ballots than the Primary’s Big Spike”, accessed at <https://www.npr.org/2022/11/04/1134435571/texas-mail-ballot-rejections-general-election>) Additionally, even the New York Times article cited by Professor McDaniel reported that a reason that many mail ballots were rejected was because they “did not fill out the section on their ballot that asked for the identification number” (“Mail Ballot Rejections Surge in Texas, with Signs of a Race Gap”, accessed at <https://www.nytimes.com/2022/03/18/us/politics/texas-primary-ballot-rejections.html>). To the best of my knowledge, election officials did not distinguish between whether a voter failed to write down any identification number from a case where the identification number did not match. For example, the Brennan Center reports the category of rejection as “Incorrect or Missing Number.” See the table entitled “Number of Rejected Mail Ballots by Rejection Reason, 2022 Primary” at <https://www.brennancenter.org/our-work/research-reports/records-show-massive-disenfranchisement-and-racial-disparities-2022-texas>.

election that were missing an identification number, most were for individuals who did not vote in the primary and thus had not yet learned, despite election administrators' best efforts, to follow the new rules.⁸ Ms. Hancock, who also serves as the president of the Texas Association of Elections Administrators, said that election officials had also done proactive things to remind voters to include their ID numbers on the carrier envelopes. In addition, the carrier envelope itself was modified to draw attention to the ID field using a bold red box.⁹

43. For these reasons, I would expect that if anything, mail ballot rejection rates going forward will continue to decline. In addition, I believe that the net effect of the changes made to help voters reduce mistakes when voting by mail, the increased voter familiarity with the new mail-in voting process, and the nearly 80 percent decline in mail ballot rejection rates that resulted from these factors, collectively cast serious doubt on the prospect that any racial or ethnic pattern in mail ballot rejections during the 2022 primary will be sustained going forward.

X. Concluding Opinions

44. It would certainly be troubling if SB1 had caused voter turnout in Texas to decline 30 percent relative to 2020, or even if it had caused smaller declines in turnout relative to other baseline election years. However, I show in the analysis above that while Texas turnout in 2022 did decline from 2016, 2018, and 2020 levels, the declines observed over that time period were similar, and sometimes smaller, than what occurred in the rest of the country. In addition, I show that relative to 2014, which like 2022 was a midterm election year, election turnout actually increased in Texas, as well as relative to the rest of the country. In short, I show that the reductions in turnout emphasized by

⁸ Of the voters who had voted in the primary, Ms. Hancock said "This is a new process for them. Those who voted in the primary and the runoff know what they need to do, as opposed to someone who is only voting in the November election." See <https://www.texastribune.org/2022/10/20/voting-texas-ballot-rejections/>.

⁹ See <https://www.texastribune.org/2022/10/20/voting-texas-ballot-rejections/>.

Professor McDaniel are either overstated (if using 2014 as a baseline), or are similar to what occurred elsewhere in the country over the same time period. This indicates that whatever caused the declines that Professor McDaniel highlighted, it is clearly not SB1.

45. Similarly, it would be worrisome if SB1 had caused a disproportionate decline in voter turnout, or in early voting, among counties with larger Black population shares. However, to the extent turnout did decline more among Black counties, that decline was driven by counties whose early voting hours were unaffected by SB1. Put differently, the statistical evidence of a decline in overall turnout and early in-person voting is stronger for counties whose early voting hours were already in compliance with SB1, compared to those counties that had to restrict hours as a result of SB1. Again, this suggests that whatever the cause of these declines, it is clearly not SB1, since SB1 did not impact the early voting hours of the counties driving the result that Professor McDaniel highlights.

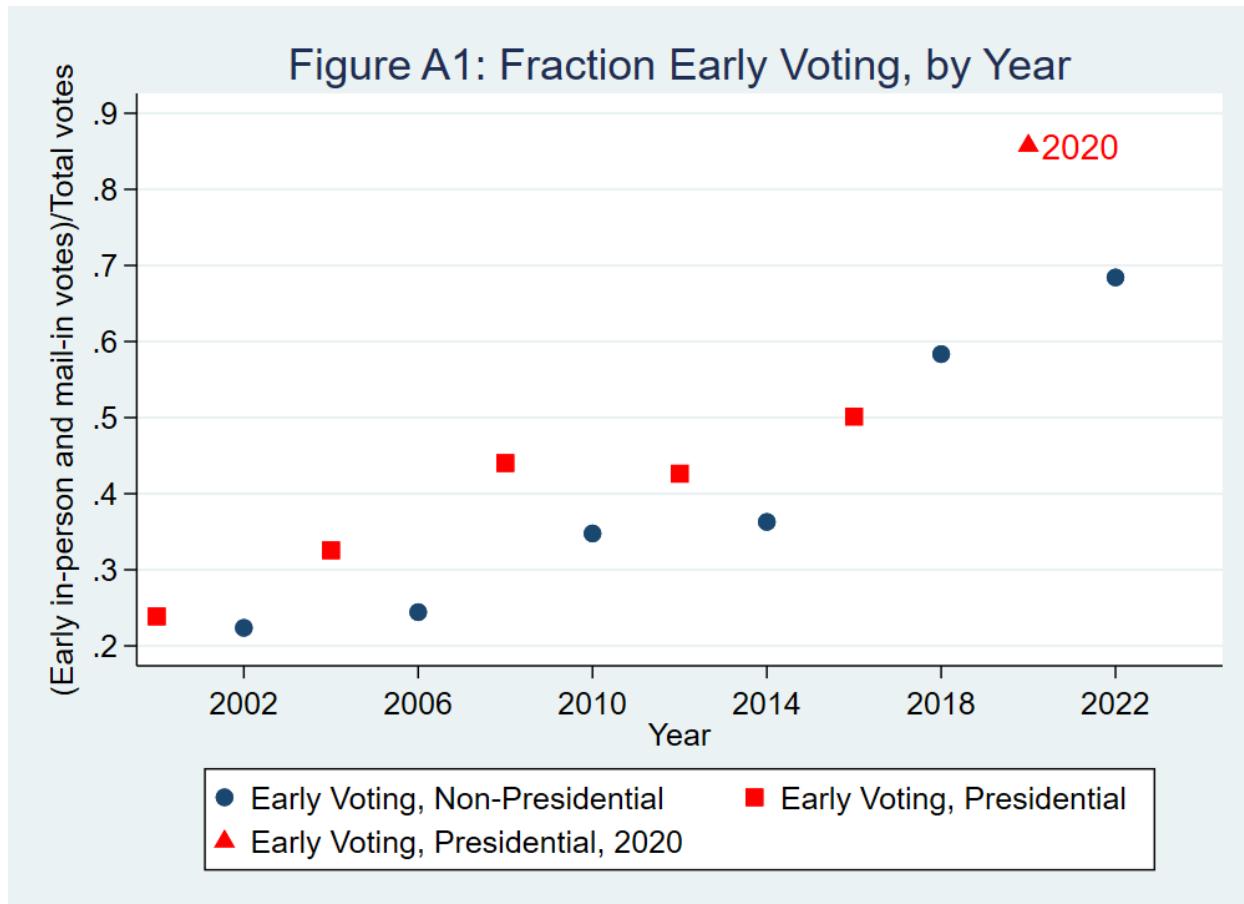
46. Perhaps for these reasons, it is unsurprising that Professor McDaniel was a bit apprehensive in the text of his report about his findings. In particular, he stated that the extent to which the larger declines in turnout among counties with high Black population shares was driven by SB-1 “cannot be discerned from these data”, and that “it is not clear the extent to which these changes brought by SB-1 contributed to the steeper drop in turnout in counties with a larger proportion of Black residents.” In this way, Professor McDaniel’s conclusion in his report, which states that “the analysis I have conducted indicates to be [sic] that new voting laws have a detrimental impact on voting with indications of racial bias” does not follow from either his own interpretation of his results, or my own analysis of the data he used to generate those results. Indeed, based on both his analysis of the data and mine, I find no evidence that suggests that SB1 reduced overall turnout or early-voter turnout, or caused disproportionately large reductions in overall turnout or early voting among counties with larger Black population shares.

Respectfully Submitted,



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Appendix A



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Academic Appointments

2018 – Present	Professor of Economics
2015 – Present	Private Enterprise Research Center Rex B. Grey Professor of Economics, Texas A&M University
2011 – 2018	Associate Professor of Economics, Texas A&M University
2006 – 2011	Assistant Professor of Economics, University of Pittsburgh

Research Appointments

2015 – Present	Research Associate, National Bureau of Economic Research
2013 – Present	Research Fellow, IZA
2011 – 2015	Faculty Research Fellow, National Bureau of Economic Research

Editorial Positions

2018 – Present	Associate Editor, <i>Journal of Labor Economics</i>
2015 – Present	Associate Editor, <i>Journal of Human Resources</i>

Education

Ph.D. Economics, University of Florida, August 2006
Dissertation Advisor: David Figlio

B.A. Economics, Hope College (*summa cum laude*), June 2001

Research Interests

Applied Microeconomics, including Labor Economics, Law and Economics, and the Economics of Education

Publications

“The Effect of Open-Air Waste Burning on Infant Health: Evidence from Government Failure in Lebanon” (with Pierre Mouganie and Ruba Ajeeb), forthcoming in *Journal of Human Resources*

“The Effect of School and Neighborhood Peers on Achievement, Misbehavior, and Adult Crime” (with Stephen B. Billings), forthcoming in *Journal of Labor Economics*

“Does Race Matter for Police Use of Force? Evidence from 911 Calls” (with Carly Will Sloan), *American Economic Review* 2022, 112(3): 827-860.

“The Effect of Own-Gender Jurors on Conviction Rates” (with Brittany Street), *Journal of Law and Economics* 2021, 64(3): 513-537.

“(Almost) No One Votes Without ID, Even When They Can” (with Vijetha Koppa), *Economics Letters* 2021, 205: 1-3.

“The Impact of College Diversity on Behavior Toward Minorities” (with Scott E. Carrell and James West), *American Economic Journal: Economic Policy* 2019, 11(4): 159-182.

“The Long-Run Effects of Disruptive Peers” (with Elira Kuka and Scott E. Carrell), *American Economic Review* 2018, 108(11): 3377-3415.

“Peer Quality and the Academic Benefits to Attending Better Schools (with Pierre Mouganie and Yaojing Wang), *Journal of Labor Economics* 2018, 36(4): 841-884.

“Cash for Corollas: When Stimulus Reduces Spending” (with Steven L. Puller and Jeremy West), *American Economic Journal: Applied Economics* 2017, 9(3): 1 – 35.

“Illegal Immigration, State Law, and Deterrence” (with Sandra Orozco-Aleman), *American Economic Journal: Economic Policy* 2017, 9(2): 228-252.

“Vehicle Miles (Not) Traveled: Why Fuel Economy Requirements Don’t Increase Household Driving” (with Jeremy West, Jonathan Meer, and Steven L. Puller), *Journal of Public Economics* 2017, 145: 65-81.

“Are School Counselors an Effective Education Input?” (with Scott E. Carrell), *Economics Letters* 2014, 125(1): 66-69.

“Bank Privatization, Finance, and Growth” (with Daniel Berkowitz and Koen Schoors), *Journal of Development Economics* 2014, 110: 93-106.

“Does Strengthening Self-Defense Law Deter Crime or Escalate Violence? Evidence from Expansions to Castle Doctrine (with Cheng Cheng) *Journal of Human Resources* 2013, 48(3): 821-854.

“Family Business or Social Problem? The Cost of Unreported Domestic Violence” (with Scott E. Carrell) *Journal of Policy Analysis & Management* 2012, 31(4): 861-875.

“Is Poor Fitness Contagious? Evidence from Randomly Assigned Friends” (with Scott E. Carrell and James West) *Journal of Public Economics* 2011, 95(7-8): 657-663.

“The Ticket to Easy Street? The Financial Consequences of Winning the Lottery” (with Scott Hankins and Paige Marta Skiba) *Review of Economics and Statistics* 2011, 93(3): 961-969.

“Does Drinking Impair College Performance? Evidence from a Regression Discontinuity Approach” (with Scott E. Carrell and James West) *Journal of Public Economics* 2011, 95 (1-2): 54-62.

“Does High School Quality Matter? Evidence from Admissions Data” (with Daniel Berkowitz) *Economics of Education Review* 2011, 30(2): 280-288.

“Lucky in Life, Unlucky in Love? The Effect of Random Income Shocks on Marriage and Divorce” (with Scott Hankins) *Journal of Human Resources* 2011, 46(2): 403-426.

“Externalities in the Classroom: How Children Exposed to Domestic Violence Affect Everyone’s Kids” (with Scott E. Carrell) *American Economic Journal: Applied Economics* 2010, 2(1): 211-228.

“The Effect of Attending the Flagship State University on Earnings: A Discontinuity-Based Approach” *Review of Economics and Statistics* 2009, 91(4): 717-724.

Other Publications

“Returns to Education Quality”. 2020. In Steve Bradley and Colin Green (Eds.), *The Economics of Education: A Comprehensive Overview, 2nd edition*. Edited by Steve Bradley and Colin Green. Elsevier Academic Press.

“Domino Effect” (with Scott E. Carrell). 2009. *Education Next*: 9(3). Available at http://www.hoover.org/publications/ednext/Domino_Effect.html.

Working Papers

“The Scale and Nature of Neighborhood Effects on Children: Evidence from a Danish Social Housing Experiment” (with Stephen B. Billings and Gabriel Pons Rotger)

“Illegal Immigration: The Trump Effect” (with Sandra Orozco-Aleman)

“When Should We Trust Weighted Least Squares Estimates?” (with Cheng Cheng)

Awards

IZA Young Labor Economist Award, 2012 (with Scott E. Carrell)

Teaching Experience

Texas A&M University:

Sports Economics, Public Economics I (PhD-level), Econometrics II (1st-year PhD), Labor Economics I (2nd-year PhD)

University of Pittsburgh:

Labor Economics (PhD-level), Sports Economics, Intermediate Public Finance, Industrial Organization, and Research Methods in Empirical Microeconomics

University of Florida:

Public Finance and Managerial Economics

Department Service

Executive Committee (Fall 2011 – Fall 2014; Fall 2016 – Spring 2017)

Graduate Instruction Committee (Fall 2012 – Spring 2019)

Director of PhD Admissions (Fall 2012 – Spring 2015; Fall 2018 – Spring 2019; Spring 2023)

Director of PhD Program (Fall 2012 – Fall 2014)

Applied Microeconomics Search Committee (2011-12, 2012-13, 2014-15)

Primary Dissertation Advisor (Initial Placement, Current Position)

(Non-tenure track positions and co-advisor roles are noted if applicable; excludes committee memberships)

Suhyeon Oh (expected 2025)

Maya Mikdash (expected 2024)

Adam Bestenbostel (2022, Air Force Academy, non-tenure-track Assistant Professor)

Meradee Tangvatchaparong (2021, 5-year non-tenure-track Assistant Professor, Hitotsubashi

University’s Institute of Economic Research))

CarlyWill Sloan (2020, Claremont Graduate University, now at United States Military Academy

West Point)

Brittany Street (2019, University of Missouri)

Abigail Peralta (2018, Louisiana State University)

Yaojing Wang (2017, Bank of America, co-advised with Li Gan, now at Peking University)

Vijetha Koppa (2016, Stephen F. Austin State University, now at Institute of Management)

<u>Jillian Carr</u>	Technology, Dubai) (2015, Purdue University)
<u>Pierre Mouganie</u>	(2015, American University of Beirut, now at Simon Fraser University)
<u>Gonzalo Sanchez</u>	(2015, Pontificia Universidad Católica de Ecuador)
<u>Cheng Cheng</u>	(2014, University of Mississippi, now at Amazon)

Presentations

Essen Health Conference (keynote speaker, scheduled May 2023); Clemson University (November 2022); Berlin Applied Micro Seminar, October 2022; Simon Fraser University, April 2022, Jinan University, October 2021; National University of Singapore, April 2021; University of Florida, April 2021; ASSA American Economic Association Annual Meeting (x2), January 2021; San Diego State University, October 2020; Boston University, September 2020; University of Maryland, September 2020; Notre Dame, September 2020; NBER Summer Institute – Crime, July 2020; Claremont McKenna College, February 2020; Claremont Graduate University, January 2020; American Economic Association Annual Conference, January 2020; Southern Economic Association Annual Conference, November 2019; Victoria University of Wellington Applied Econometrics Workshop, October 2019 (keynote speaker); University of Mississippi, October 2019; Mississippi State University, October 2019; Stata/Texas Applied Microeconomics Conference, October 2019; University of Florida, May 2019; Georgia Tech, March 2019; West Virginia University, March 2018; University of Tennessee, January 2018; Purdue University, January 2018; University of Kentucky, October 2017; Annual Meeting of the Western Economic Association, June 2017; University of Leicester, June 2017; University of Leicester Domestic Violence Workshop, June 2017; American University of Beirut, March 2017; University of Uppsala, March 2017; Montana State University, April 2016; American University of Beirut, March 2016; Columbia University, February 2016; Annual Meeting of the American Economic Association Meeting (January 2016); Annual Meeting of the Southern Economic Association (November 2015); NBER Education Program Meeting (November 2015); Brigham Young University, February, 2015; Federal Reserve Bank of New York, February, 2015; Stata/Texas Applied Microeconomics Conference, November 2014; University of Florida, November, 2014; Louisiana State University, October 2014; Institute for the Study of Labor (IZA), October 2014; University of Wisconsin-Milwaukee, October 2013; Ghent University, September 2013; University of Texas – Dallas, April 2013; Stata/Texas Applied Microeconomics Conference, December 2012; Southern Economic Association Annual Meeting, November 2012; University of Texas-Austin, April 2012; Georgetown Public Policy Institute, April 2012; University of Missouri, October 2011; Baylor University, August 2011; Texas A&M University, November 2010; University of Houston, October 2010; University of Pittsburgh School of Medicine, Psychiatry and Epidemiology Seminar, October 2009; NBER Summer Institute, Law and Economics Program, July 2009; University of California at Davis, April 2009; University of California at Berkeley Labor Lunch, March 2009; American Economic Association Annual Meetings, January 2009; Texas A&M University, September 2008; Carnegie Mellon University, September 2008; NBER Summer Institute, Economics of Education Program, July 2008; Society of Labor Economists Annual Meeting, May 2008; Vanderbilt University, April 2008; NBER Education Working Group, November 2006

Other Information

Referee: *American Economic Journal: Applied Economics, American Economic Journal: Economic Policy, American Economic Review, American Journal of Health Economics, American Sociological Review, Berkeley Electronic Press, Contemporary Economic Policy, Economic Development and Cultural Change, Economic Inquiry, Economic Journal, Economics of Transition, Education Economics, Education Finance and Policy, Empirical Economics, European Journal of Law & Economics; Journal of Applied Econometrics, Journal of Comparative Economics, Journal of Demographic Economics, Journal of the European Economic Association, Journal of Health Economics, Journal of Human Resources, Journal of Labor Economics, Journal of Policy Analysis and Management, Journal of Political Economy, Journal of Population Economics, Journal of Public Economics, Journal of Sports Economics, Journal of Urban Economics, Labour Economics, Proceedings of the National Academy of Sciences (PNAS), Quantitative Finance, Quarterly Journal of Economics, Regional Science and Urban Economics, Review of Economics and the Household, Review of Economics and Statistics, and Southern Economic Journal.*

Reviewer: Israel Science Foundation, National Science Foundation, Marsden Fund (New Zealand), Dutch Research Council

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